



RESOURCE AND PATIENT MANAGEMENT SYSTEM

IHS Pharmacy-Automated Dispensing Interface System (BOP)

User Manual

Version 1.0

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BOP*1.0*1 patch revision

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PREFACE

This manual provides information regarding the use of the IHS Pharmacy-Automated Dispensing Interface System (BOP)

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1.0 Overview

The Automated Dispensing System automated medication dispensing systems needs information from the RPMS database. The Automated Dispensing System interface sends RPMS patient data and orders to the Automated Dispensing System in real-time, as transactions occur.

The network administrator determines the TCP/IP addresses, an IP address for each Automated Dispensing System automated medication dispensing system, and an IP address for each RPMS IHS facility.

When an Automated Dispensing System automated medication dispensing system is installed, Automated Dispensing System site engineers and RPMS staff determine what medications will be dispensed. They then create a table that maps the Automated Dispensing System medication formulary to the RPMS Drug file, using the Internal Entry Number (IEN) of the records in the RPMS Drug file.

RPMS staff determines the types of medications that will be dispensed by the Automated Dispensing System automated medication dispensing system as well as the types of patient (inpatients, outpatients)

The next step is to initialize the Automated Dispensing System automated medication dispensing system database with RPMS patients and orders. Only inpatients and their orders are preloaded at this point.ⁱ

The final step to beginning live interface activity is started by initializing the BOP Monitor. This process makes sure that a sender and receiver are always ready to receive and transmit HL7 messages across the interface.

Patch 1 introduces Unit Dose ordering and creation of outpatient prescriptions for dispenses not associated with an inpatient order.

ⁱ This is done with a utility routine described in the Installation part of this document.

2.0 Functionality

1. Data in the BOP QUEUE file is placed into HL7 messages and transmitted to the Automated Dispensing System via TCP/IP protocol. The RPMS system always acts as the client and initiates a connection to the Automated Dispensing System.
2. Receives dispensing information back from the OmniCell/Pyxis system and places the data in the proper RPMS file structure. If the RPMS-incoming message is for a Supply item, a record is placed into the AUPNSUP (IHS HL7 Supply File). If the message is for a Drug, file 90355.5 is checked. If the drug pointer exists in that file, an unverified outpatient prescription is created if the dispense is not associated with an existing inpatient order. If the drug pointer is not in the 90355.5 file, a record will be added to the AUPNSUP file. Dispenses received on inpatients and where the FT1 segment contains an order number will update the EXTRA UNITS DISPENSED field in the Pharmacy Patient File. Dispenses received on inpatients lacking an order number will accumulate in the BOP RECEIVE DRUG File and the user will be prompted to link the entry when an inpatient order is entered for that medication.
3. Provides the ability to toggle the interface transmissions on or off for inpatient or outpatient activity. These toggles will be in the BOP Site Parameter file.
4. There is a list of "Outpatient Admitting Areas". This list may be used to filter patient information that will be sent to the Automated Dispensing System. If the list is empty and the field Send All Outpatients is set to "no", NO outpatients whose registration activity activates an interface call will be transmitted to the Automated Dispensing System. If there are any entries, no patient will be sent across the interface unless its "ADMITTING AREA" is in the list. Since the Admitting Area is only asked if the ADT ACTIVE flag is set to "Yes" in the Record Tracking System Parameters file, the interface operations instructions will discuss this in detail and give examples.
5. If Outpatient data is to be sent, and the RPMS facility would like to have an RPMS visit file record created when the outpatient is admitted through the SD IHS WALK-INS option, then the field **Create Visit At Check In (in the Hospital Location file)** should be set to yes.
6. Uses TCP/IPⁱⁱ to transmit and receive data.
7. Monitors itself and reliably keeps itself running.

ii Makes socket to socket connection, Send and receives HL7 Messages. HL7 messages are structured as followed: \$C(11) = first byte == HL7 Message (each segment ends with \$C(13)) == and each HL7 message ends with \$C(28,13). Each message is followed by an exchange of HL7 Acknowledgements. The TCP/IP process keeps channel opened constantly.

8. Transmits ADT to the Automated Dispensing System automated medication dispensing system real-time.
9. Transmits patient orders to the Automated Dispensing System automated medication dispensing system real-time.
10. Can be used to transmit patient information in a batch mode to initialize the Automated Dispensing System automated medication dispensing system.
11. Reports on queues into which data is put for transmission. The Queue file (90355.1) will now store the actual transmission data in the "O" node. It will retain the actual HL7 data message that is transmitted.
12. Can be started and stopped by users using easy to access options on their menu.
13. Can be parameterized to meet specific site needs.
14. Can work with multiple room/bed coding combinations for patient locations.
15. Self maintains its file with its purge routine.

2.1 Data Transmitted from RPMS

1. ADT: When a patient is admitted, discharged, or transferred an ADT transaction may be sent to the interface for transmission to the Automated Dispensing System (if a patient's location has been setup as an Automated Dispensing System location).
2. Outpatient Demographic Data is sent to the Automated Dispensing System if outpatient locations are included in the site parameters or if the field Send All Outpatients in the parameter file is set to yes..
3. Orders: When the order type (PRN, Continuous, One-Time, Fill-On-Request, On-Call, New Orders, Renewed Orders, or Other Orders) has been selected for sending to the Automated Dispensing System.

2.2 Data Received by RPMS

1. When medications are dispensed to patients for orders, the Automated Dispensing System sends an FT1 statement to the RPMS interface. The receiver determines if it is a drug or a supply item and updates the proper RPMS database files. An exception file exists for data received for patients, orders or items that cannot be resolved in the RPMS database.

2. "Keep Alive" messages that demonstrate that the interface is active.
3. Acknowledgements for data received from the ILC OmniCell/Pyxis Interface.

3.0 Menu

The Interface menus provide control over the interface. Two menus are released with the interface, BOP USER MENU and BOP IRM MENU. Below are the option names descriptions:

3.1 Option List for the BOP User Menu [BOPMENU]

Users require the security key BOPZUSER in order to use this menu. The following options can be accessed through this menu.

DCF	BOP Drug Configuration . . .
PAT	Display Queue for a patient
SEND	Send One Patient ADT/Orders to Interface
SHOW	Show Ready Queue
SITE	Site Parameter Edit
TRB	Interface Trouble Shooting . . .

BOP Drug Configuration (DCF) [BOP DRUG CONFIG]

Abbreviation DCF. This menu contains options that allow the user to manage the BOP DRUG file entries.

Display Queue For a Patient (PAT) [BOP PATIENT DISPLAY]

Abbreviation PAT. This option is used to display the transactions in the sending queue for a particular patient.

Send one patient (DFN) ADT & orders to Automated Dispensing System (SEND) [BOP TRANSMIT ONE PATIENT]

Abbreviation SEND. This option is often used to force ADT and Order transactions across the interface. If an ADT or order did not make it to the interface, this option allows the sending of all of that patient's current orders to the Automated Dispensing System. The patient IEN (DFN) is entered and if the patient's location is a sending location the patients ADT information and all orders for that patient are sent. This option is for inpatients only.

Show Ready Queue (SHOW) [BOP SHOW]

Abbreviation: SHOW. This option displays the status of the sending queue. The display shows the total number of items in the queue file, how many are ADT, how many are Orders, and how many timing transactions from Automated Dispensing System.

BOP Site Parameters (SITE) [BOP SITE]

Abbreviation: SITE. This option allows the editing of the BOP SITE file, in the event that a parameter needs to be changed.

Interface Trouble Shooting... (TRB) [BOP TROUBLE MENU]

Abbreviation: TRB. Within this Menu, there are 3 options:

Check the Automated Dispensing System log file (CHK) [BOP CHECK TRANSACTIONS]

Display future Automated Dispensing System Monitor tasks (FUT) [BOP FUTURE TASK LIST]

Display running task and job ID (RUN) [BOP RUN TASK LIST]

There are times when the interface will have nothing to send. At that time, it will create a future Automated Dispensing System Monitor task scheduled for 5 to 15 minutes in the future. If you see a Future Task, it means the interface is running, but completed its processing and will check for more processing at the time listed in TaskMan.

The CHK option will show the actual numbers in the Queue file that are waiting to be sent. If there are entries in that file and the numbers do not change, contact IRM and let them know.

3.2 Option List for the BOP IRM Menu

The following options can be accessed through this menu.

MON	Start the Monitor
PAT	Display Queue for a patient
SEND	Send One Patient ADT/Orders to Interface
SHOW	Show Ready Queue
SITE	Site Parameter Edit
STOP	Stop the Interface
TRB	Interface Trouble Shooting ...

Start the Monitor (MON) [BOP MONITOR]

Abbreviation MON. This option starts the BOP interface monitor. The monitor constantly checks the system to see if the appropriate jobs are running. If it finds that a necessary process is not running, it schedules it to run using the RPMS Task Manager. The monitor process reschedules itself using the RPMS background task scheduler, TaskMan. It will run 'X' seconds in the future, (determined by the field "Reschedule Frequency" in the IHS BOP Site Parameters file, #90355 –Recommend 300 to 900 seconds). When it runs it checks to see if the transmitter to Automated

Dispensing System and receiver from Automated Dispensing System are running and attempts to start them if they are not running.

Display Queue for a patient (PAT) [BOP PATIENT DISPLAY]

Abbreviation PAT. This option is used to display the transactions in the sending queue for a particular patient.

Send one patient (DFN) ADT & orders to Automated Dispensing System (SEND) [BOP TRANSMIT ONE PATIENT]

Abbreviation SEND. This option is often used to force ADT and Order transactions across the interface. If an ADT or order did not make it to the interface, this option allows the sending of all of that patient's current orders to the Automated Dispensing System. The patient IEN (DFN) is entered and if the patient's location is a sending location the patients ADT information and all orders for that patient are sent. This option is for inpatients only.

Show Ready Queue (SHOW) [BOP SHOW]

Abbreviation: SHOW. This option displays the status of the sending queue. The display shows the total number of items in the queue file, how many are ADT, how many are Orders, and how many timing transactions from Automated Dispensing System.

BOP Site Parameters (SITE) [BOP SITE]

Abbreviation: SITE. This option allows the editing of the setup file, in the event that a parameter needs to be changed.

Stop the BOP interface(STOP) [BOP STOP]

Abbreviation: STOP. The interface can be stopped in two ways. The first is to edit the setup file and change the monitor active field (file 90355) from ON to OFF. This will stop the monitor so that the monitor will not reschedule itself in TaskMan. This does not stop the current running transmitter or receiver. The second way to stop the interface is to use this option. This option will halt the current running transmitter and receiver but does not interfere with the interface monitor. Use this option if the interface needs to be stopped for a short while but not permanently.

BOP TROUBLESHOOT MENU (TRB) [BOP TROUBLESHOOT MENU]

Abbreviation: TRB. Within this Menu, there are 3 options:

CHK Check the Log File [BOP CHECK TRANSACTIONS]

FUT Display Future Monitor tasks [BOP FUTURE TASK LIST]

RUN Display Running Tasks and job ID [BOP RUN TASK LIST]

There are times when the interface will have nothing to send. At that time, it will create a future BOP Monitor task scheduled for 3 to 15 minutes in the future. If you see a Future Task, it means the interface is running, but completed its processing and will check for more processing at the time listed in TaskMan.

The CHK option will show the actual numbers in the Queue file that are waiting to be sent. If there are entries in that file and the numbers do not change, contact IRM and let them know.

4.0 Site Parameters

The BOP Site Parameter File (90355) is used to define how the interface will work. The user may determine:

- if ADT should go to the Automated Dispensing System
- which divisions will be allowed
- if outpatients data should be sent
- which orders are active
- which order types should be sent
- if the interface is active
- IP addresses and their respective sockets (ports) for each hospital division (Each division goes to a different pro-car.) (The pro-car is the Automated Dispensing System interface receiver. It then sends the transmission to the appropriate Automated Dispensing System console.)

4.1 BOP Site Parameters

Name: Your Site Name from the institution file #4

Facility ID: Your Site Number from the institution file #4

Receiving Application: which vendor are you interfacing to. OmniCell or Pyxis

Acknowledgment Time Out: Number of seconds between 5 and 180.

Number of Retries: Number of tries between 5 and 10.

ADT Active: Enter YES if sending admission information. Enter NO if not sending admission information

ADT Send Inpatient: Enter YES if sending Inpatient ADT information

ADT Send Outpatient: Enter YES if sending Outpatient ADT information

Admit Diagnosis: Enter Yes if sending the free text 'short admit diagnosis'.

Send PRN: Enter Yes if sending PRN orders.

Send Continuous: Enter Yes if sending continuous orders.

Send One-Time: Enter Yes if one-time orders are to be sent.

Send Fill-On-Request: Enter Yes if sending fill on request orders.

Send On-Call: Enter Yes if sending on call orders.

New Orders Active: Enter Yes if sending new orders.

Renew Orders Active: Enter Yes if sending re-new orders.

Other Orders Active: Enter Yes if sending other orders.

Send Formulary: Enter Yes if updates to the drug file are to go to the remote system.

Processing ID: P The processing id is always set to “P”

Version ID: 2.3 The version id is for the version of the HL7 standard interface document followed.

P-O Interface Domain: Enter the domain name for your site. From ^XMB(“NETNAME”)

This will be different in test versus live. Remember when you put the data into live to change this field!

Interface Vendor: Enter ‘O’ for OmniCell or ‘P’ for Pyxis

Base Allergy: Enter Other Allergy/Adverse Reaction

Location Decoding Type: Enter the appropriate style for room bed to be sent to the Automated Dispensing System.

Send All Outpatients: If yes, all outpatient transactions will be sent regardless of location. Note: If this field is set to yes, but the Location is not found in the Outpatient Location multiple (below), the Outpatient ADT information will be sent, but the Location associated with it will be the Default OP Send Location (above).

Default OP Send Location: Default map value agreed with Automated Dispensing System. Used when Location cannot be found in the Outpatient Location multiple (below).

Default Outpatient Location: If outpatients are to be sent what is the default location.

Default OP Location Pointer: Pointer to Hospital Location file (44).

Default CLERK: New person entry used for prescription creation.

Default SIG: Default text to be entered for patient instruction as part of an outpatient prescription.

4.1.1 Multiple For Outpatient Areas

To ensure best data, enter all outpatient locations that will send ADT information.

Note: if Send All Outpatients is set to Yes, but a location is not defined below, the transaction will be sent using the Default OP Send Location

Outpatient Location: The free text partial match to the .01 field in file 44 outpatient location that can send to the Automated Dispensing System.

OP Send Location: Enter the 'map' value for the outpatient location that will be sent to the Automated Dispensing System.

OP Location Pointer: The pointer to file 44 for the outpatient location that can send to Automated Dispensing System. Externally the user will see the full name of the location from file 44.

Monitor Active: This field controls whether the BOP interface continues to run.

Set this to OFF. When ready to begin testing or go-live, do the following:

1. Do Connectivity Check (CALL^%ZISTCP) see section 7.0 Troubleshooting.
2. If you have connectivity, change Monitor Active to ON
3. Use BOP MONITOR to start up interface
4. Run Pre-seed ^BOPTSD. This has to be run from the mumps level.

Monitor Rescheduling Frequency: Frequency to check the interface monitor-300 to 900 seconds.

Stop: Used to stop the interface.

4.1.2 Multiple Receiving Facilities

Receiving Facility: Enter the name for the receiving facility (from Medical Center Division file #40.8)

Channel Active: Enter Yes if sending to the Automated Dispensing System.

Accept Transactions: Enter Yes if accepting transactions for sending to the Automated Dispensing System.

Client or Server: Enter CLIENT if your side is to initiate contact with the Automated Dispensing System.

Enter SERVER if your side is to listen to the Automated Dispensing System.

IP Address: Enter the ip address of the Automated Dispensing System. (determined by information systems)

Send Socket: Enter the socket number that will be used to send to the Automated Dispensing System.

Receive Socket: Enter the socket number that will be used to receive from the Automated Dispensing System.

Pharmacy Outpatient Site: Select the Outpatient Site file entry that corresponds with this receiving facility.

4.2 Sample BOP Site Parameters

```
OUTPUT FROM WHAT FILE: 90355 BOP SITE PARAMETERS
NAME: IHS                                FACILITY ID: 100
  RECEIVING APPLICATION: AUTOMATED DISPENSING SYSTEM    ACKNOWLEDGEMENT
TIME OUT: 30
  NUMBER OF RETRIES: 5                                SEND PRN: YES
  SEND CONTINUOUS: Y                                  SEND ONE-TIME: YES
  SEND FILL-ON-REQUEST: YES                            SEND ON-CALL: YES
  PROCESSING ID: P                                      VERSION ID: 2.3
  SEND FORMULARY: YES
  ADMIT DIAGNOSIS: YES                                SEND DISCHARGE ICD9 DIAGNOSIS: YES
  ADT ACTIVE: YES                                     NEW ORDERS ACTIVE: YES
  RENEW ORDERS ACTIVE: YES                             OTHER ORDERS ACTIVE: YES
  INTERFACE VENDOR: AUTOMATED DISPENSING SYSTEM    ADT SEND OUTPATIENT: YES
  ADT SEND INPATIENT: YES
RECEIVING FACILITY: HOSPITAL DEMO                CHANNEL ACTIVE: YES
IP ADDRESS: 204.161.113.217                        SEND SOCKET: 9601
LISTEN SOCKET: 9602                                ACCEPT TRANSACTIONS: YES
CLIENT OR SERVER: CLIENT
PHARMACY OUTPATIENT SITE: PHARMACY
MONITOR ACTIVE: ON                                MONITOR RESCHEDULING FREQUENCY: 300
MONITOR CURRENT TASK: 66106                        DAYS TO KEEP IN QUEUE: 29
STOP: INTERFACE ACTIVE
OUTPATIENT LOCATION: ER
  P-O INTERFACE DOMAIN: your.domain.gov
  LOCATION DECODING TYPE: NU-ROOM-BED IN ROOM-BED
  DEFAULT OUTPATIENT LOCATION: ER                SEND ALL OUTPATIENTS: NO
  BASE ALLERGY:
  DEFAULT CLERK:
  DEFAULT SIG:
```

4.3 Special Outpatient Parameters from the Site Parameter File

Each location that is to send outpatient ADT information should be entered into the OUTPATIENT LOCATION multiple (field 10 and its subfields) to ensure correct location information. Even if all locations are to send data, it is still appropriate for each location to be entered into these multiple fields. If a location is to send outpatient data but the location does not have a field 10 entry, the location in field 9.3 (DEFAULT OP SEND LOCATION) will be used. If there is no entry in 9.3, field 9.2 (DEFAULT OUTPATIENT LOCATION) will be used. If there is no entry in field 9.2, then the value "AEC" will be sent.

Upon entry of Outpatient ADT information, here are the steps that are taken:

1. The code will use the location for the transaction and get the name of the location from the Hospital Location File (#44).
2. The code will go through all entries in the Outpatient Location multiple (#10) to see if there are any Outpatient Location entries (field #1) that contain a partial match entry that matches the name from the Hospital Location File. This partial match entry must be the entry in the Automated Dispensing System Mapping Table. If a match is found, the #1 field will be sent as the partial match, and OP Send Location (field #2) will be sent as the Location pointer.
3. If there are no matches, we will next take the entry in the Default OP Send Location (#9.3). If this entry exists and there is ever a situation where a match is not found in the #10 multiple, this will be the location that is sent in the HL7 message as the partial match field, and Default OP Location Ptr (#9.5) will be sent as the Location pointer.
4. If there are no matches in multiple 10 and field 9.3 is also blank, the Default Outpatient Location (#9.2) will be sent.
5. Finally, if all of the above fields are blank, the string "AEC" will be sent.

DEFAULT OP SEND LOCATION: AEC// ??

This is the location that the Automated Dispensing System cabinet will associate the patient with. For outpatients, it is the service that is going to provide services to the patient at the moment that services are scheduled. The string that is entered into this field is partial matched against the medical center's list of services.

Examples are 'AEC', 'ER' or 'CLINIC'.

NOTE: The interface needs to use an outpatient location that is coordinated with the Automated Dispensing System. The 'Default

OP Send Location' field (#9.3) is used on the Automated Dispensing System, which needs to know what will be sent to it - this is the location of the Automated Dispensing System robot that will dispense the medications. If the 'Default Outpatient Location' field (#9.2) is deleted on the RPMS database, the first 9 characters of the actual outpatient admitting location will be sent to the Automated Dispensing System. Before deleting the 'Default Outpatient Location' field (#9.2) coordinate with the Automated Dispensing System representative.

```
Select OUTPATIENT LOCATION: ADM// ?
Answer with OUTPATIENT LOCATION
Choose from:
  AEC
  ADM

  You may enter a new OUTPATIENT LOCATION, if you wish
  Answer must be 1-9 characters in length.

Select OUTPATIENT LOCATION: ADM//
OUTPATIENT LOCATION: ADM//
OP SEND LOCATION: ADMIS//
OUTPATIENT LOCATION POINTER: ADMISSIONS//
```

The OUTPATIENT LOCATION (#.01) can be an abbreviation of the location.

The OP SEND LOCATION (#1) is the mapped field in the Automated Dispensing System map.

The OUTPATIENT LOCATION POINTER (#2) is the full name of the location from the HOSPITAL LOCATION file (44).

NOTE: This multiple describes a table of valid outpatient locations. Any location that contains any of the entries in this field will be keyed on to send registration data to the Automated Dispensing System cabinet.

5.0 Wards, Beds and Facilities

There are fields in the BOP Site Parameter File to control how the interface will send ward, bed and facility data. If these parameters are not set up by the installing staff, the system will set them up automatically according to defaults as below:

- A Type field determines how ward, bed and facility are extracted from VADPT information. There are currently 5 types. The default type uses the standard 3 fields from VADPT information.
- Another field, Automated Dispensing System domain was added so that code can be written in the interface that is specific to one site, using a name that will probably be the same as the sites Internet domain name – and is used as the default by looking at ^XMB(“NETNAME”).

The field may be described in more detail as below:

The LOCATION DECODING TYPE is necessary because different facilities use room/bed and Nursing Unit in different formats. Type 1, for instance (Palo-Alto defaults to this type as it was installed before the implementation of this field) indicates that NU-Room-Bed are stored in the Room-Bed field. At Hines, type 2, the NU is stripped of all "-"s.

Choose from:	
0	DEFAULT
1	NU-ROOM-BED IN ROOM-BED
2	STRIP NU OF '-'S
WARDLOCATION-ROOM-BED	
LOCATION-ROOMBED	
NUROOM-BED OR NU-ROOM-BED	

6.0 FT1 Supply/Drug Billing Segments

Receiving FT1 Supply/Drug Billing Segments From dispensing system into RPMS

The interface has the ability to receive and process FT1 segments for Supplies and Drugs from the dispensing system.

When this functionality is used the ‘Listen Socket’ must contain the socket/port number that the dispensing system will send information to the RPMS system.

When a DFT message comes in, patient information is taken from the PID segment and item information is taken from the FT1 segment. Records received from the

dispensing side will be placed into the 90355.1 segment with a status of 99 so that they are not processed along with the outgoing ADT segments.

An identifying number is sent in FT1:23. In addition, the interface checks FT1:16 to see if the item is for a drug or supply item.

If the transaction is for a Supply item that is removed or credited back into the cabinet, a 90355.4 record is created. That 90355.4 record then also generates a record in the IHS HL7 Supply file (^AUPNSUP).

If the transaction is for a Drug item, in addition to creating the 90355.4 record, if the drug pointer is included in the BOP DRUG file (90355.5) the interface will generate an Unverified Drug entry in the Drug file (^PSRX) as well as an entry in the RX VERIFY file (^PS(52.4)) file so that the Verification file options recognize the new Unverified prescription.

If the transaction is for a Drug item and the drug pointer is NOT in the BOP DRUG file, an entry in the IHS HL7 Supply file (^AUPNSUP) will be created.

Files Used

90355.2 - BOP Receive Drug
90355.3 - BOP Receive Supply
90355.35 – BOP IV File
90355.4 - BOP Receive Exception
90355.44 – BOP Transfer to Drug
90355.5 – BOP DRUG

7.0 Troubleshooting

The first steps taken to determine if the interface is running should be to use the BOP TROUBLESHOOT MENU. Check FUT for future tasks and find out if the future jobs are being built. Check RUN for running tasks. You should see a BOPRNEW task, a BOPRNEW1 task, and a BOPT1 task.

One can check the main transmission file (90355.1) to determine if the transactions are current.

Look at ^BOP(90355.1,0. Get piece 3, which is the last record created. Look at ^BOP(90355.1,#,0). Piece 1 is a date/time stamp in the format of 3040625.111111 to show 06/25/04 at 11:11:11.

The “AS” cross reference is used to determine the records that need to be sent. One can look at ^BOP(90355.1,”AS”,0<ret> to find out what records are in the queue to be transmitted. If there are no records in the “AS”,0 cross reference and the last record in ^BOP(90355.1 is current, then the interface is running.

One other check that should always be done is to check the RPMS error monitor. If there is a problem with the first record ready to be transmitted, the rest of the transactions will not cross. In addition, the error will be created for that first record each time the future job is rescheduled, so you will see the same error every 3 to 5 minutes.

To get the interface past that “bad” first record, either a user or an IRM member may go into the troubleshoot menu and select CHK. If you can see that the same number shows up over and over again (through at least one iteration of a new future job being created), then when you are asked if you want to remove the “AS” cross reference, you may answer yes. That should allow the interface to get past the “bad” record and process all other records.

Sometimes it may be appropriate to stop both sides of the interface. Restarting the vendor system, then restarting the RPMS system will reset both systems and restart transmissions. Follow the process below:

1. Stop the job that is transmitting and the Monitor. There is a flag in the system parameters that can be used to stop the Monitor (The field is called Monitor Active. Make sure that field is set to OFF). The transmitter needs to be stopped by a programmer in programmer mode. You may have to wait a few minutes to ensure that all jobs have completed (you should have some experience at your site and know how long it may take for this process).
2. If the background jobs are still running, a programmer must go into the system and stop the jobs manually. The mumps utility to check the system status is %SS (to check if a job is running).

3. Contact the Automated Dispensing System Support Center. Have your Automated Dispensing System customer ID available. The Automated Dispensing System representative will dial in to stop the interface and will reboot the Automated Dispensing System if necessary. Please ask the Automated Dispensing System representative to remain on-line until you complete Step 4.
4. Before restarting the interface on the RPMS sytem, it is recommended that one use the CALL^%ZISTCP process described below to clear out the ip/socket combo used for the interface. If there are “ghost” jobs left on RPMS, using the call^%zistep process will usually clear them out.
5. Restart the Monitor on the RPMS system.

Otherwise, the following can help to analyze the problem:

1. The transmission job is not running

If the interface does not seem to be transmitting data to the vendor system, it may be because the monitor is not running. Check to see if the monitor has been scheduled. Use the BOP TROUBLESHOOT MENU to determine if the Future job exists and also if the Running jobs exist. If the Troubleshoot options says that there are no future jobs and no running jobs, then use the option BOP MONITOR to restart the interface. ONLY USE THE BOP MONITOR OPTION IF NO FUTURE OR RUNNING JOBS EXIST.

2. Check TCP/IP connections

If the interface does not seem to be transmitting data to the vendor system, it may be a TCP/IP connectivity issue. Symptoms that indicate this kind of problem usually can be seen in the transmission files. Records will not be marked acknowledged. The vendor system will not have the patients on file that should be there.

Follow this procedure.

1. Stop the job that is transmitting and the Monitor. There is a flag in the system parameters that can be used to stop the Monitor. The transmitter needs to be stopped by a programmer.
2. Contact the Automated Dispensing System Support Center. Have your Automated Dispensing System customer ID available. The Automated Dispensing System representative will dial in to stop the interface and will reboot the Automated Dispensing System if necessary. Please ask the Automated Dispensing System representative to remain on-line until you complete Step 4
3. Go to the RPMS machine and use the following code:

(Example: vendor IP address = 111.22.33.44, port = 6000)

```
D CALL^%ZISTCP("111.22.33.44",6000) W POP
```

If POP = 0 a successful connection was made. Restart the RPMS Monitor. The systems should start communicating again. Have the Automated Dispensing System representative verify that data is being received from the RPMS system and is being passed to the Automated Dispensing System Console.

If you get POP=0, which is a successful connection, you must close that connection when you are finished before you can try to restart the interface. Type the following to close the connection:

```
D CLOSE^%ZISTCP
```

If POP=1 there is not connectivity. At this point, advanced troubleshooting will be required to identify the exact cause of the communication problem.

8.0 Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Service Center by:

Phone: (505) 248-4371 or
(888) 830-7280

Fax: (505) 248-4363

Web: <http://www.rpms.ihs.gov/TechSupp.asp>

Email: ITSCHelp@mail.ihs.gov